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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,991

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Mitsuyoshi Kuwahata

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04/29/2009

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EXAMINER

TESKIN, FRED M

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,991	Applicant(s) KUWAHATA ET AL.	
	Examiner Fred M. Teskin	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

This Office action follows a reply filed on 21 January 2009. Per the reply, claim 1 has been amended. Claims 1 and 4-8 are currently pending and under examination.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 4-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-263810 (JP '810)(all references thereto being to the corresponding English language translation, of record) in view of CA 2335777 (Kaneka).

As set out in the prior action, JP '810 has disclosed a vinyl chloride copolymer obtained by copolymerizing vinyl chloride monomer and a styrene macromonomer end-terminated with a methacrylate group; see page 15, bridging paragraph and pages 19-20, Table 1. The Result section of Table 1 includes an Example 5 which describes a copolymer composition comprising the vinyl chloride monomer unit and the styrene macromonomer unit in proportions (wt. %) of 60 and 30 respectively - i.e., a 60/30 weight ratio, which falls within the range recited in claim 1 for the corresponding monomer and macromonomer. The same copolymer composition further comprises 5 wt. % of vinyl acetate (as Comp. (C)) as per new claims 7-8. Unfortunately, the disclosed styrene macromonomer is prepared by free radical (non-living) polymerization, as by means of lauryl peroxide as catalyst (per page 16, final

paragraph) rather than by living radical polymerization, this being the essential difference between JP '810 and the present invention.

It is, however, known from Kaneka that living radical polymerization affords various practical advantages over "ordinary radical (e.g., free radical) polymerization" when preparing a vinyl polymer-based macromonomer having a terminal polymerizable carbon-carbon double bond (macromonomer (I)); e.g., high rate of polymerization, narrow molecular weight distribution and well-controlled side chain molecular weights (see Kaneka at page 1, lines 5-10; page 8, line 30 to page 10, line 15 and page 52, lines 2-6). Kaneka further teaches, as the monomer constituting the main chain of the disclosed macromonomer (I), various specific species but singles out styrene type monomers and (meth)acrylic monomer as preferred from the standpoint of physical properties of products (page 7, lines 31-34). Kaneka additionally provides for radical polymerization of the macromonomer (I) with a copolymerizable monomer (II) and indicates that all the radical-polymerizable monomers mentioned therein in reference to production of the main chain of the macromonomer (I) can be used as the monomer (II) (pages 34-35, bridging paragraph). As the monomers mentioned in Kaneka in reference to production of the macromonomer (I) main chain include vinyl chloride, vinylidene chloride and vinyl acetate (page 6, line 20 to page 7, line 30), Kaneka would have suggested to the ordinarily skilled practitioner the suitability of copolymerizing its macromonomer (I) with the applicants' monomer (A). In addition, Kaneka proposes (page 41, lines 8-15) use of a branched polymer, made by polymerizing the

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macromonomer (I), in adhesive applications. JP '810 similarly contemplates adhesive utility for the vinyl chloride copolymers disclosed therein (page 4, second paragraph).

Thus, at the time of applicants' invention, it would have been obvious to one of ordinary skill in the art to modify JP '810 by preparing the styrene macromonomer unit of the vinyl chloride copolymer disclosed therein by living radical polymerization in order to take advantage of the practical benefits of that preparation method as taught by Kaneka and in the expectation of obtaining a copolymer product displaying equivalent utility in adhesive applications. By so modifying JP '810 in view of the teachings of Kaneka, an ordinarily skilled practitioner would have arrived at the subject matter of the present invention.

Applicants' arguments with respect to Omine et al (JP '810) and Nakagawa et al (Kaneka) have been fully considered but they are not persuasive of error in the repeated rejection. While it is true, as argued, that neither reference discloses that a soft vinyl chloride copolymer resin or a copolymer made of a macromonomer obtained by living radical polymerization has no yield point when tested under JIS K7133 at the 50 mm/min pulling rate as required by present claim 1, there is no dispute that Omine et al exemplify copolymer compositions comprising vinyl chloride unit (A) and styrene macromonomer unit (B) in proportions (wt.%) that fall fully within the range recited in claim 1 for ratio of corresponding monomer (A) and macromonomer (B). See JP '810, Actual Examples 3-5 on pages 19-20, each of which details a copolymer composition meeting the compositional limitations of the pending claims. Applicants have pointed to

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no record evidence, and examiner has independently found none, establishing that the compositionally identical copolymers disclosed by Omine et al in fact display a yield point under the measurement conditions claimed herein. Indeed as to the difference in macromonomer preparation between Omine et al and the present invention, the use of living radical polymerization to prepare applicants' macromonomer is related herein only to the obtainment of polymer properties not directly related to yield point and which are reasonably expected in view of the teachings of Nakagawa et al; e.g., a narrow molecular weight distribution as reported on page 8 of the instant specification is positively taught by Nakagawa et al (e.g., at page 8, line 30 to page 10, line 15). In view of the identity of copolymer composition between Omine et al and the present invention, the mere recitation in claim 1 of a property not recognized in the applied art is insufficient to establish that the soft vinyl chloride copolymer resin of the present invention differs substantially from the closest embodiments of Omine et al noted above. Accordingly, the continued rejection over JP '810 in view of Kaneka is still deemed tenable and therefore must be maintained.

No claims are in condition for allowance at this time.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fred M Teskin/

Primary Examiner, Art Unit 1796

FMTeskin/04-26-09

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